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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,563	08/02/2001	Ichiro Amimori	012777-043	4585

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EXAMINER
HON, SOW FUN

ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/890,563	AMIMORI ET AL.
	Examiner	Art Unit
	Sow-Fun Hon	1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13/09/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5, 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al. (US 5,747,152) in view of Palmquist et al. (US 2,407,680).

Oka et al. has a film having a high total light transmittance of 93.5 % or more (95%) comprising, on a transparent support (transparent substrate film 3), a hard coat layer 4 with ultrafine particles 5, and a low-refractive index layer 9 covering said hard coat layer 4 for an antireflection effect (column 45, lines 1-35) meaning that the low refractive index layer functions as an antireflection layer. The film is used for surfaces of polarizing plates in liquid crystal displays (column 2, lines 45-65). Since the total light transmittance is only 95 %, the haze value is 1 % or more (100 – 95 = 5 %). The particles provide a matt property as can be seen below and as defined in the specification (spec, page 13, lines 5-15). The low refractive index layer has a refractive index value of 1.45 or less (not more than) (column 23, lines 1-15).

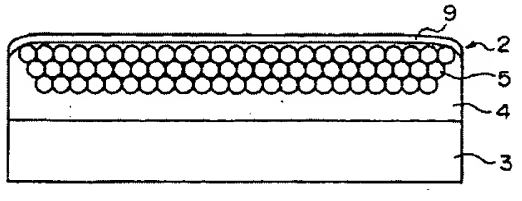


FIG. 9

The low refractive index material is formed by incorporating a fluorine-containing macromolecular compound (polyvinylidene fluoride) and a fluorinated compound (trifluoroethylacrylate) into polyfunctional acrylate crosslinked by ionization radiation (ionizing radiation curing resin) (column 30, lines 35-45). Since fluorine-containing compounds have very low surface energies and are well known lubricants and slip agents, it is the examiner's position that these compounds have a coefficient of friction of 0.20 or less. The hardcoat layer is formed of an ionization radiation crosslinked binder polymer (column 14, lines 60-70).

The embodiment below shows a polarizing plate comprising a polarizing layer 13 and two protective films 12 and 14 thereon, wherein at least one of the protective films is the antireflection film 12 having a high transmittance and matt property and wherein a matted layer (particle containing layer 10 since layer 9 is the low refractive index layer) is disposed at the opposite side to the polarizing layer. Since the antireflection film 12 may be laminated on both sides of the polarizing layer (element 13) (column 25, lines 55-70), it follows that the polarizing plate having a high transmittance and matt property may also be provided at the back light side, the matted layer being disposed toward the back light side.

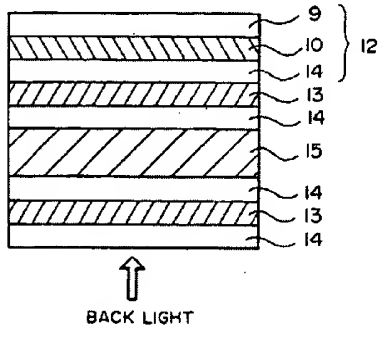
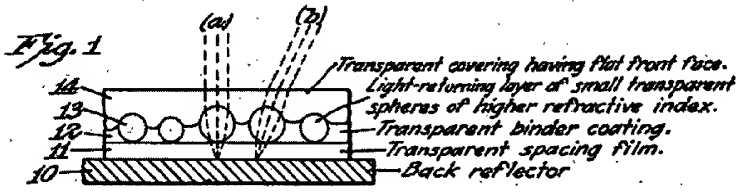


FIG. 14

Oka et al. fails to teach that the ultrafine particles are of a particle size of 1.0 to 10 μm which is larger than the thickness of the hard coat layer.

Palmquist et al. has a film having a high transmittance (transparent) and matt property (layer of sphere particles as defined by the specification (spec, page 13, lines 5-15), comprising on a transparent support (spacing film 11), a hard coat layer (transparent binder coating 12) incorporated therein particles (spheres 13) that is larger than the thickness of the hard coat layer 12, and a low-refractive-index layer 14 covering said hard coat layer 12.



The particle (sphere) diameter size is taught to include those of less than 25 μm (1mil) which overlaps the claimed range of 1.0 to 10 μm and is adjusted to provide the desired light absorption or scattering. Since they preferable should be graded so as not to depart drastically from the average size (column 9, lines 50-75) it follows that a narrow particle size distribution is preferable and would encompass a coefficient of variation of 0.2 or less.

The transparent binder coating 12 is chosen for its ability to bind (bond to) the particles (spheres) and is a hardcoat (column 11, lines 1-15). It can be seen from the embodiments that the diameter size of the particles 13 (spheres) is larger than the thickness of the hardcoat 12. The transparent covering 14 has a lower refractive index than the particles 13. (The spheres have a refractive index substantially higher than that of the transparent covering 14) (column 4, lines

50-75). Palmquist et al. teaches that the structure allows the spheres 13 to provide a lenticular surface formed by the convex spherical front extremities of the spheres projecting beyond the hardcoat (binder material) which holds them in place (column 1, lines 25-35).

Since Palmquist et al. teaches that a lenticular surface is formed by the convex spherical front extremities of the spheres projecting beyond the hardcoat, and Oka et al. teaches that the low refractive index layer covering the spheres is an antireflection layer, it would have been obvious to one of ordinary skill in the art to have used the particle size and configuration of particles projecting beyond the hardcoat as taught by Palmquist et al. in lieu of the hardcoat contained ultrafine particles in the invention of Oka et al. in order to obtain an antireflection film with the desired light absorption and scattering properties due to the lenticular matt surface.

3. Claims 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al. in view of Palmquist et al. as applied to claims 1-3, 5, 7-10 above, and further in view of Ida et al. (US 4,963,624).

Oka et al. has been discussed above, and teaches a film having a high total light transmittance of 93.5 % or more comprising, on a transparent support, a hard coat layer with ultrafine particles to provide a matt property, and a low-refractive index layer covering said hard coat layer.

Oka et al. only teaches that the ultrafine particles are inorganic, not composed of a resin having a Moh's scale of hardness of less than 7.

Ida et al. teaches light diffusion materials which diffuse light in a required direction for use in displays. Use of the materials in the form of mat(t finished) surface and lenticular lens shape is taught. Crosslinked polymer beads with an average particle diameter size of 1-16 μm

were found to be a good substitute for the inorganic transparent fine particles having an average diameter size of 10 μm or less. Quartz is an example (column 1, lines 1-55 and column 2, lines 1-25) and is a constituent of glass. Since the polymers are soft and easier to scratch relative to the inorganic materials for which the Moh's scale of hardness was developed, it is the examiner's position that the polymer resin has a Moh's scale of hardness of less than 7.

Since Ida et al. teaches that crosslinked polymer particles of with an average particle diameter size of 1-16 μm are a good substitute for the inorganic transparent fine particles having an average diameter size of 10 μm or less, and that the directional light diffusion properties of the particles are suitable for matt surface and lenticular lens shapes, it would have been obvious to one of ordinary skill in the art to have used the 1-10 μm diameter size crosslinked polymer particles of Ida et al. in lieu of the ultrafine particles in the invention of Oka et al. in order to obtain an antireflection film with the desired light absorption and scattering properties due to the lenticular surface.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Sow-Fun Hon
07/25/03

NASSER AHMAD
PRIMARY EXAMINER
Acting SPE